

REMARKS

Prior to this Reply, Claims 1-40 were pending. Through this Reply, Claims 3, 7, 8, 20-22, 26, 27, 29, 30 and 33 have been amended. Claim 28 has been cancelled without prejudice to, or disclaimer of, the subject matter contained therein. No claims have been added. Accordingly, Claims 1-27 and 29-40 are now at issue in the present case.

I. Drawings

In the Office Action, the Examiner objected to the drawings because the application lacked formal drawings. The Examiner stated that, in order to avoid abandonment of the application, correction was required.

In response, Applicants are submitting replacement Figs. 1, 2, 3, 4, 5A, 5B, 6, and 7 (contained on Replacement Sheets 1-5) to improve the quality of the drawings. Applicants note that the symbol "&" has been added before the word "RECOVERY" in blocks 160 and 164 in Fig. 3 and in blocks 216 and 220 in Fig. 4. No new matter has been added. Figs. 1, 2, 3, 4, 5A, 5B, 6 and 7 constitute all of the drawings of the application.

II. Amendments to the Specification

The Examiner objected to the Abstract because the Examiner believes that that it does not comply with proper language and format. Specifically, the Examiner stated that the Abstract should avoid phrases, such as, "the method and apparatus are disclosed" line 1, "attempted" line 7, "attempt" line 8, and "attempts" line 11. The Examiner also stated that the Abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. The Examiner required correction of the Abstract.

In response, Applicants are providing an amended Abstract, which is believed to address the Examiner's concerns. In view of the amended Abstract, Applicants submit that the Examiner's objection has been overcome.

Applicants have also amended the paragraph that begins on page 6, line 10 of the application to correct a minor grammatical error.

III. Rejection Under 35 U.S.C. § 112

The Examiner rejected Claims 3-14, 16, 19-25 and 26-40 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner found that Claims 3, 7, 8, 16, 19-22, 25, 26, 29, 32 and 33 recite the phrase "attempting" or "attempts" or "attempt", which render the claims indefinite, because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. Claims 4-6, 9-15, 17, 18, 23, 24, 27, 28, 30, 31 and 34-40 were also rejected because they depend upon a rejected base claim.

In response, Applicants have amended Claims 3, 7, 8, 20, 21, 22, 26 and 33 to address the Examiner's rejection. Applicants note that Claims 16, 19, 25, 29 and 32 have not been amended because Applicants believe that the use of the word "attempts" does not render such claims indefinite. Specifically, the word "attempts" is used in the context of the number of "times" an error recovery step may be performed. Accordingly, Applicants believe the rejection of Claims 3-14, 16, 19-25 and 26-40 under 35 U.S.C. § 112, second paragraph, has been overcome.

IV. Rejection Under 35 U.S.C. § 102(b)

The Examiner rejected Claims 1-40 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,812,752 to Yamada (hereinafter “Yamada”). Applicants respectfully traverse the Examiner’s rejection because Yamada fails to disclose all of the limitations found in the claims.

With respect to Claim 1, Yamada does not disclose the steps of: “determining a successful error recovery step from said error recovery step order which was successful in recovering said first read error; and adjusting said error recovery step order in the hard disk drive based on said determining step.” On page 4 of the Office Action, the Examiner stated that Yamada discloses the step of “adjusting the error recovery step order in the hard disk drive based on the determining step, by changing the execution order from static to dynamic steps, where the time at which the ERP shifts from static to dynamic ERP steps differs depending on the type of error, Fig. 6.” Applicants disagree.

Specifically, Yamada discloses an error recovery procedure (ERP) that selects and executes an error recovery step using a timeout value, the elapsed time, and the execution time of an error recovery step. (Col. 2, lines 44-47). As set forth in Col. 4, lines 44-57 of Yamada (wherein emphasis has been added):

[I]n step 202, a timer is started. The timer measures the elapsed time from starting the ERP command execution. In step 203, prior to loading an actual ERP step, the elapsed time is compared to a previously set critical time. *If the elapsed time is less than the critical time*, then, in step 204, the next static ERP step specified in the static ERP table is loaded. The steps in the static ERP table have been ordered for *sequential execution*. The error routine is executed in step 206.

However, in step 203, *if the elapsed time is greater than or equal to the critical time*, then in step 205, the next ERP step is loaded from the dynamic ERP table which has already been

ordered for *sequential execution*. In step 206, the loaded step is executed.

Accordingly, whether a static ERP step or a dynamic ERP step will be performed is based on a comparison between the elapsed time and a critical time. In contrast, in Claim 1, the error recovery step order is based upon a successful error recovery step used to recover a first read error.

Furthermore, as explained in Col. 5, line 1 to Col. 6, line 42, once a determination has been made as to whether the static ERP table or the dynamic ERP table is to be accessed, the particular error recovery step from the selected table is performed based upon the current error type. The order in which the error recovery steps appear in the tables does not change (see, e.g., Col. 5, lines 40-42). However, certain error recovery steps may be skipped based upon the determined error type. Nowhere does Yamada teach adjusting the order of error recovery steps based upon a successful error recovery step used to recover a first read error.

For at least the above reasons, Applicants believe that Claim 1, and the claims that depend therefrom, are patentably distinguishable from Yamada. Applicants believe that somewhat similar reasoning can be applied to Claims 20, 26 (as amended) and Claims 27 (as amended), along with the claims that depend therefrom.

With respect to Claim 33, Applicants believe that the Examiner has failed to show where Yamada teaches the steps of: “performing an error recovery based on an error recovery table when said first error recovery step is not successful in recovering said read error, wherein said first error recovery step is omitted from said error recovery table; and performing an error recovery based on said error recovery table when read error does not correspond to said error type and said error location of an error memory element.” For at least this reason, Applicants

believe that Claim 33, and the claims that depend therefrom, are patentably distinguishable from Yamada.

Applicants believe that, at least, some of the dependent claims are patentable for additional reasons. Selected dependent claims are discussed below.

With respect to Claim 2, Applicants believe that Yamada fails to disclose the step of: “moving said successful error recovery step to the beginning of said error recovery step order when said successful error recovery step is not at the beginning of said error recovery step order.” Again, as described in connection with Claim 1, the order of Yamada’s error recovery steps is not based on whether an error recovery step was successful. Accordingly, for at least the above reasons, Applicants submit that Claim 2 is patentably distinguishable from Yamada.

With respect to Claim 3, Applicants believe that Yamada fails to disclose the step of: “performing said successful error recovery step before any other steps in said error recovery step order when a second error is detected which has said first error type and is within a predetermined distance from said first error location.” The reasoning associated with Claim 3 is similar to that associated with Claim 2. Accordingly, for at least the above reasons, Applicants submit that Claim 3 is patentably distinguishable from Yamada.

With respect to Claims 4-6, Applicants submit that Yamada fails to disclose any type of predetermined distance between a second error and a first error. For at least the above reasons, Applicants submit that Claims 4-6 are patentably distinguishable from Yamada.

With respect to Claim 8, Yamada does not disclose the steps of: “comparing a third error type and a third error location of said third error to said first error type and first error location; and performing said successful error recovery step when said first and third error types are similar and when said first and third error locations are within a predetermined distance from

each other.” For at least this reason, Applicants believe that Claim 8 is patentably distinguishable from Yamada.

With respect to Claims 9-12, Applicants submit that Yamada fails to disclose any type of predetermined distance between a third error and a first error. For at least the above reasons, Applicants submit that Claims 9-12 are patentably distinguishable from Yamada.

With respect to Claim 13, Applicants submit that Yamada fails to disclose that “said recording step also includes storing an occurrence count in said first memory element.” For at least this reason, Applicants believe that Claim 13 is patentably distinguishable from Yamada.

With respect to Claim 14, Applicants submit that Yamada fails to disclose the steps of: “comparing a third error type and a third error location of said third read error to said first error type and first error location; recovering from said third read error using said error recovery table when said third error type is not similar to said first error type; and recording an error type, an error location, and a recovery step for said third read error in a second memory element.” For at least these reasons, Applicants submit that Claim 14 is patentably distinguishable from Yamada.

With respect to Claim 15, Applicants submit that Yamada fails to disclose the steps of: “determining weight data associated with each error recovery step in said error recovery step order; modifying said weight data based on said successful error recovery step; and re-ordering said error recovery step order based on said modified weight data.” For at least these reasons, Applicants submit that Claim 15 is patentably distinguishable from Yamada.

V. Additional Claim Fees

In determining whether additional claim fees are due, reference is made to the Fee Calculation Table (below).



Fee Calculation Table

	Claims Remaining After Amendment		Highest Number Previously Paid For	Present Extra	Rate	Additional Fee
Total (37 CFR 1.16(c))	39	Minus	40	= 0	x \$18 =	\$ 0.00
Independent (37 CFR 1.16(b))	5	Minus	4	= 1	x \$86 =	\$ 86.00

As set forth in the Fee Calculation Table (above), Applicants previously paid claim fees for forty (40) total claims and for four (4) independent claims. Accordingly, the Commissioner is hereby authorized to charge Deposit Account No. 50-2198 in the amount of \$86.00 for the presentation of one (1) independent claim in excess of four (4).

Applicants believe that no other fees are due. Nevertheless, the Commissioner is hereby authorized to charge Deposit Account No. 50-2198 for any fee deficiencies associated with filing this paper.

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VI. Conclusion

It is believed the above comments establish patentability. Applicants do not necessarily accede to the assertions and statements in the Office Action, whether or not expressly addressed.

Applicants believe that the application appears to be in form for allowance. Accordingly, reconsideration and allowance thereof is respectfully requested.

The Examiner is invited to contact the undersigned at the below-listed telephone number regarding any matters relating to the present application.

Respectfully submitted,

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